

WHAT IS CLAIMED IS:

1. A disk apparatus comprising:

an irradiation unit configured to irradiate  
a recording surface of a disk with a light beam;

5        a reflected light detection unit configured to  
detect reflected light of the light beam irradiated by  
the irradiation unit;

      a focus control unit configured to control focus  
on the basis of a focus control signal generated from  
10       the reflected light detected by the reflected light  
detection unit;

      a tilt amount detection unit configured to specify  
a plurality of regions with different radial positions  
on the disk, and to detect tilt amounts of respective  
15       regions with respect to an optical axis of the light  
beam irradiated by the irradiation unit on the basis of  
the focus control signal;

      a tilt correction unit configured to calculate  
tilt correction values for respective regions in  
20       accordance with the tilt amounts of the respective  
regions detected by the tilt amount detection unit, and  
correct a tilt of the optical axis with respect to  
a predetermined region on the basis of the tilt  
correction value corresponding to the predetermined  
25       region; and

      a recording unit configured to record data on the  
predetermined region while the tilt of the optical axis

with respect to the predetermined region is corrected by the tilt correction unit.

2. An apparatus according to claim 1, further comprising a reproduction unit configured to reproduce  
5 data from the predetermined region while the tilt of the optical axis with respect to the predetermined region is corrected by the tilt correction unit.

3. An apparatus according to claim 1, wherein the tilt amount detection unit detects a tilt amount of the  
10 optical axis with respect to a region bounded by two positions with different radial distances on the disk on the basis of a difference between bias components of two focus control signals corresponding to the two positions.

15 4. An apparatus according to claim 1, further comprising a recording control unit configured to correct, when data is continuously recorded on first and second, successive regions, a tilt of the optical axis with respect to the first region using the tilt  
20 correction unit, record data by tracing the light beam from the leading end to the trailing end of the first region, temporarily interrupt recording, return tracing of the light beam to the first region, correct a tilt of the optical axis with respect to the second region  
25 using the tilt correction unit while tracing the light beam from the first region toward the leading end of the second region, and record data by tracing the light

beam from the leading end to the trailing end of the second region.

5           5. An apparatus according to claim 2, further comprising a reproduction control unit configured to correct, when data is continuously reproduced from first and second, successive regions, a tilt of the optical axis with respect to the first region using the tilt correction unit, reproduce data by tracing the light beam from the leading end to the trailing end of the first region, temporarily interrupt reproduction, return tracing of the light beam to the first region, correct a tilt of the optical axis with respect to the second region using the tilt correction unit while tracing the light beam from the first region toward the leading end of the second region, and reproduce data by tracing the light beam from the leading end to the trailing end of the second region.

          6. A data recording method comprising:  
specifying a plurality of regions with different radial positions on a disk, and detecting tilt amounts of the respective regions with respect to an optical axis of a light beam on the basis of a focus control signal used to just-focus the light beam on a recording surface of the disk;  
25           calculating tilt correction amounts for the respective regions in accordance with the tilt amounts of the respective regions;

correcting a tilt of the optical axis with respect to a predetermined region on the basis of the tilt correction amount corresponding to the predetermined region; and

5            recording data on the predetermined region while the tilt of the optical axis with respect to the predetermined region is corrected.

7. A method according to claim 6, wherein the tilt amounts of the respective regions are detected  
10           using a method of detecting a tilt amount of the optical axis with respect to a region bounded by two positions with different radial distances on the disk on the basis of a difference between bias components of two focus control signals corresponding to the two  
15           positions.

8. A method according to claim 6, further comprising:

          when data is continuously recorded on first and second, successive regions,

20           correcting a tilt of the optical axis with respect to the first region;

          recording data by tracing the light beam from the leading end to the trailing end of the first region;

          temporarily interrupting recording;

25           returning tracing of the light beam to the first region, and correcting a tilt of the optical axis with respect to the second region while tracing the light

beam from the first region toward the leading end of the second region; and

recording data by tracing the light beam from the leading end to the trailing end of the second region.

5           9. A data reproduction method comprising:

specifying a plurality of regions with different radial positions on a disk, and detecting tilt amounts of the respective regions with respect to an optical axis of a light beam on the basis of a focus control  
10 signal used to just-focus the light beam on a recording surface of the disk;

calculating tilt correction amounts for the respective regions in accordance with the tilt amounts of the respective regions;

15           correcting a tilt of the optical axis with respect to a predetermined region on the basis of the tilt correction amount corresponding to the predetermined region; and

reproducing data from the predetermined region  
20 while the tilt of the optical axis with respect to the predetermined region is corrected.

10. A method according to claim 9, wherein the tilt amounts of the respective regions are detected using a method of detecting a tilt amount of the  
25 optical axis with respect to a region bounded by two positions with different radial distances on the disk on the basis of a difference between bias components of

two focus control signals corresponding to the two positions.

11. A method according to claim 9, further comprising:

- 5           when data is continuously reproduced from first and second, successive regions,
  - correcting a tilt of the optical axis with respect to the first region;
  - reproducing data by tracing the light beam from
  - 10       the leading end to the trailing end of the first region;
  - temporarily interrupting reproduction;
  - returning tracing of the light beam to the first region, and correcting a tilt of the optical axis with
  - 15       respect to the second region while tracing the light beam from the first region toward the leading end of the second region; and
  - reproducing data by tracing the light beam from
  - the leading end to the trailing end of the second
  - 20       region.